



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

May 2018

Log No. _____

Code being amended: ☒ Commercial Provisions ☐ Residential Provisions

Code Section # **C406.13 – Low flow showerheads for R-1 and R-2 occupancies**

Brief Description:

Brief Description: Provides path to a C406.1 credit for the installation of 1.25 gpm or less showerheads for fixed shower heads in Group R-1 & R-2 occupancies.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

C406.13 Low flow showerheads for Group R-1 and R-2 occupancies. All showerheads installed in Group R-1 and R-2 dwelling or sleeping units shall have a maximum listed flowrate of 1.25 gallons per minute or less at 80 psi operating pressure for fixed showerheads and a maximum listed flowrate of 1.50 gallons per minute or less at 80 psi operating pressure for handheld showerheads. When a shower is served by more than one showerhead, including handheld showerheads, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.25 gallons per minute or less for fixed or 1.5 gallons per minute or less for handheld, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

*TABLE C406.1
EFFICIENCY PACKAGE
CREDITS*

Code Section	Commercial Building Occupancy					
	Group R-1	Group R-2	Group B	Group E	Group M	All Other
	Additional Efficiency Credits					
1. More efficient HVAC performance in accordance with Section C406.2	2.0	3.0	3.0	2.0	1.0	2.0
2. Reduced lighting power: Option 1 in accordance with Section C406.3.1	1.0	1.0	2.0	2.0	3.0	2.0
3. Reduced lighting power: Option 2 in accordance with Section C406.3.2 ^a	2.0	3.0	4.0	4.0	6.0	4.0
4. Enhanced lighting controls in accordance with Section C406.4	NA	NA	1.0	1.0	1.0	1.0
5. On-site supply of renewable energy in accordance with	3.0	3.0	3.0	3.0	3.0	3.0

C406.5						
6. Dedicated outdoor air system in accordance with Section C406.6 ^b	4.0	4.0	4.0	NA	NA	4.0
7. High performance dedicated outdoor air system in accordance with Section C406.7	4.0	4.0	4.0	4.0	4.0	4.0
8. High-efficiency service water heating in accordance with Sections C406.8.1 and C406.8.2	4.0	5.0	NA	NA	NA	8.0
9. High performance service water heating in multi-family buildings in accordance with Section C406.9	7.0	8.0	NA	NA	NA	NA
10. Enhanced envelope performance in accordance with Section C406.10 ^c	3.0	6.0	3.0	3.0	3.0	4.0
11. Reduced air infiltration in accordance with Section C406.11 ^c	1.0	2.0	1.0	1.0	1.0	1.0
12. Enhanced commercial kitchen equipment in accordance with Section C406.12	5.0	NA	NA	NA	5.0	5.0 (Group A-2 only)
<u>13. Low flow showerheads</u>	<u>1.0</u>	<u>1.0</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

- a. Projects using this option may not use Item 2.
b. This option is not available to buildings subject to the prescriptive requirements of Section C403.3.5.
c. Buildings or building areas that are exempt from thermal envelope requirements in accordance with Sections C402.1.1 and C402.1.2 do not qualify for this package.

Purpose of code change:

Save energy and water.

Projects pursuing this credit are anticipated to result in energy savings of 20% or greater for domestic hot water consumption, depending on quantity of showers in the building.

Your amendment must meet one of the following criteria. Select at least one:

- ☐ Addresses a critical life/safety need.
- ☐ The amendment clarifies the intent or application of the code.
- ☒ Addresses a specific state policy or statute.
(Note that energy conservation is a state policy)
- ☐ Consistency with state or federal regulations.
- ☐ Addresses a unique character of the state.
- ☐ Corrects errors and omissions.



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Check the building types that would be impacted by your code change:

- | | | |
|--|--|--|
| <input type="checkbox"/> Single family/duplex/townhome | <input checked="" type="checkbox"/> Multi-family 4 + stories | <input type="checkbox"/> Institutional |
| <input type="checkbox"/> Multi-family 1 – 3 stories | <input type="checkbox"/> Commercial / Retail | <input type="checkbox"/> Industrial |

Your name Chris Little Email address chrisl@rushingco.com

Your organization Rushing Company Phone number 206-763-2944

Other contact name Eric Vander Mey

Instructions: Send this form as an email attachment, along with any other documentation available, to:
sbcc@des.wa.gov. For further information, call the State Building Code Council at 360-407-9278.

Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

No substantial costs increase for low flow shower heads.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$NA/square foot (For residential projects, also provide \$NA/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

No substantial costs increase.

As this is a proposed change to the C406 section this is an option that an owner can pursue if they choose this option and determine that it is cost effective. Therefore, cost analysis information has not been provided as it is not a mandatory requirement of the code.

Therefore, only information is provided as to the energy and/or carbon emissions savings. The Energy Code TAG may need to adjust the number of credits for based on final code language for this credit or other credits.

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

0.31KWH/ square foot (or) 1.07KBTU/ square foot

(For residential projects, also provide 768KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

eQUEST Calculator - DHW Demand

Instructions:

1 First fill in the Project Size and Water Savings tabs.

2 Fill in all blue cells

3 Data to be entered in eQuest.

	Proposed	Baseline
Faucet gpm (weighted AVG)	2.200	2.2
Showerhead gpm	1.500	2.5
Total Gal/day (occupant only)	12230	15600
Total Gal/day (w/both DW & CW)	17845	21214
GPM w/ schedule shown below	296.82	352.86

We took an existing 550 dwelling unit multifamily energy model for a project with AWHP DHW plant (annual efficiency of ~2.1 COP) and ONLY modified the DHW demand calculation to account for low-flow shower heads (2.5 GPM Baseline, 1.5 GPM Proposed). Energy model showed 3% annual energy use savings.

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

None anticipated.

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.